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A. WIRE ENGINEERING SECTION

1. Langley Signal Center Planning - A Data Voice console design is being worked on for the center. The TSB crew is continuing the necessary re-cabling of the center and minor relocations of TTY equipment in preparation for the MAX switch. The necessary initial planning with OL with respect to all necessary changes and additions to provide for the MAX () installation is in progress.

2. CIFAX

a. Alarm remotes have been installed on the Langley/State circuit and the Langley NPIC circuit.

b. There is a possibility that Stratcom will work out the use of a commercial auto-sync unit. No further work will be done towards "hand-made" auto-sync units. We prefer to use the same auto-sync units with CIFAX that we expect to use on all KG-13 circuits for common KG-13 patching arrangements on all types of systems.

3. KY-3 Call Director System - Results of testing and evaluating the pre-production model have been most satisfactory and the first partial production run delivery date is set for 1 December 1966.

4. ARLS - Installation criteria were received, reviewed, and disseminated. The prototype system will weigh in excess of 13,000 pounds, consume 18.42 kw of power, and occupy 285 square feet. A Teletype CX reader will be substituted for the original Tally reader because of excessive error rates found on the Tally when reading chadless tape. A second program specification has been rejected because of inadequacies in the routing techniques.

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5. MAX-II - [] was alerted to possible delays resulting from delays in site preparation. As a result of indecision as to whether MAX-II will be installed at Langley [] firm floor plans could not be furnished to [] on schedule and the Project Engineering Plan has been delayed.

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6. COINS - It has definitely been established that the Rixon Sebit 48 will be used on the COINS Phase 1 circuits and that auto-start units will not be used.

7. Proposed OS/Ft. Holabird Secure Card-to-Card Link - OC-E has been asked to provide information and cost figures for a secure card-to-card system. The IBM 1050 Data System, KG-13 cryptographic equipment, Bell System 2400 BPS Modem,

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and 4B Voice Line have been recommended. This system will send or receive ten 80-column cards per minute and will cost slightly less than \$40,000 the first year. Recurring annual charges should be approximately \$15,500.

8. Magnafax 840 Facsimile Transceiver - The Magnafax 840 facsimile transceiver has been received. An effort will be made to reduce the compromising emanations that exist when the Magnafax 840 system is operating in the receiver mode.

9. Data Phone System - The Data Phones have been completed and tested on line, back to back, through the classified switch. All parts and functions performed as desired. The lines for the Data Phone system have only recently been acquired, and installation will be accomplished within the next reporting period.

10. Call Director Test Set - A test set for checking the Call Directors at the contractor's plant has been designed, fabricated, and tested. This unit simulates all the functions of a KY-3 as seen by the Call Director.

11. High Density R-100 Unit - Procurement action was taken but no contract has been awarded during the reporting period.

12. Acoustically Secure Telephone Booth - A survey of commercially available acoustical telephone booths is being conducted in order to satisfy operational and security requirements for these booths at overseas locations.

13. New KW-7 Safe - No change in status.

14. CSR-4 - No change in status.

15. R20 () Keyer - R.F.I. tests have been completed and results indicate that the modified units are quite similar in R.F.I. characteristics to the unmodified R20 () units. OC-S has verbally approved the modification; therefore, the M.W.O. has been released to Drafting for reproduction. The M.W.O. will be issued to the field when written approval is received from OC-S. The modified unit eliminates the present problem of regular (sometimes daily) requirement of cleaning the stepping relay segments and wipers on tape relay transmit equipment.

16. Flexowriter Replacement - The RFI'd version of this machine is well under way and should be delivered at the end of this reporting period.

17. HW-28 - No change in status.

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But giving us a very hard time!

18. Filtron Shielded Enclosure Signal Line Filters - The prototype has been received, tested and approved. Ten containers (D10243) and fifty (R110B) filter cards are being procured. (H) 25X1A9A

19. Automatic Message Numbering and Tandem Operation System - No change in status.

20. Test Message Generator - "Foxyer" DT105 FP - Ten units are being procured and are due on 1 October.

21. Control Panel, CP-12 - No change in status.

22. A.C. Operated Distortion Measuring Set, DMS-1A-1 - The prototype has been received, tested and approved. Forty units are due in by the end of October.

23. Single Channel TTY/KG-13 - Design of a single channel TTY/KG-13 system is now complete. Equipments are being procured for evaluation and a system demonstration will be announced upon completion of engineering tests.

24. Replacement of HN-9A Low Level Data Ancillary Unit - The Rixon CCU-431-B Crypto Control Unit has been recommended as a replacement for the HN-9A. In addition to retaining the interface and timing functions of the HN-9A, the CCU-431-B includes auto-sync and sync-verification functions. Further, the CCU-431-B will operate over the entire 100,000 BPS range of the KG-13 while the HN-9A is limited to a maximum of 4800 BPS.

25. Computer System Vulnerability Study - A theoretical and empirical study of computer systems vulnerability is being made. From FS-222 measurements of actual computer systems, it is hoped that vulnerability of certain computer systems can be predicted.

The "NUMBERS" game!
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B. AREA ENGINEERING SECTION

25X1A6A 1.

25X1A6A a. The new 25X1C4A
officially provided with plans and specifications for a minimum interim on-line installation, as discussed during his pre-departure briefing. A memo with drawings and specifications for expansion of the present communications area (without enclosure) was A 25X1C4A
dispatch with the same information was sent to at 25X1A6A
the same time.

25X1A6A b. - Without our prior concurrence, 25X1C4A

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maintain two tones spaced 850 Hz. This will minimize RF frequency drift problems and also recognize the specially pulsed signal to eliminate possibility of false alarms from interference or other TTY signals.

b. Residential Alarm - R&D is also being requested to consider the design of outboard units which will respond to a re-transmitted tone via VHF (triggered from the station's regular Selcal decoder) in the companion home (portable) unit and operate a latching relay (actuates a light and/or bell) to inform the CTR that he was called if he is not at home when the call is made. Every effort will be made to use existing Agency equipment at the station and in the home. [] has agreed to loan us small separate VHF transmitter, receiver and selective calling units for test purposes.

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8. Tri-Services Receiver - We have been informed that contract negotiations for a tri-services receiver have been terminated, reportedly due to an inability of acceptable bidders to produce a receiver meeting specifications within anticipated costs.

9. Ames Building - RESS Shop - Control and transmission cables for AN-59, ATS-50 and VRA-6 antenna systems have been installed.

10. "Shot-Gun MUX" Evaluation - Most radio and TTY equipment have been delivered to [] the con-25X1A5A1 tractor. A block diagram describing usage of equipment for a system designed to simulate field and base installations using 6 channel in-band diversity (12 tones) multiplex. Engineering personnel are assisting [] with equipment inter-25X1 connections.

11. Equipment -

a. Two Kahn LSSB-63-1A SSB exciters were obtained for Engineering evaluation. One has been installed in the ESB/RESS shop; the other has been sent to the R&D Lab for an A&A evaluation with particular emphasis placed on recommendations for mechanical improvement. Spare parts kits have been defined and requisitioned for the field and Headquarters stock. An MPL has also been requested.

b. Collins 635V-1 receiving band pass filters have been received but mounting shelves with built-in inter-connecting fittings have not yet arrived. These are required before the control unit and power supply can be used to evaluate the operation of the filters. One will be tried in the RESS shop, the other will be sent to the R&D Lab for an A&A evaluation.

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c. Two Kahn "Echoplex" voice privacy units were sent to OC-OS who conducted a test between [] and [] using KWM-2A and 32MS-1B SSB transceivers. Circuit conditions were good and quality of decoded signals was acceptable. The tests were recorded on tape for laboratory analysis. OC-SP revealed that if intercept capabilities paralleled those used by OC-SP a thirty day period would be required before speech intelligence could be reconstructed. Once this was obtained subsequent intelligence could be had in no more than fifteen minutes. Of two additional units received, one was rejected by T&I. The second unit has been installed in the RESS shop. When the rejected unit is repaired this will be issued to OC-S to continue the Engineering/OC-S and OC-OS evaluation.

12. Modification Work Order - MWO No. 120 was prepared to provide for more usable meter indications on the CV-13A, B, C and D converter (used in conjunction with the medium speed set-up). This is a mandatory modification.

13. Technical Bulletin - "Differences between Northern Frequency-Shift Converters Type 174, Models 2 and 3." TB No. 143-1 was prepared and issued for distribution.

D. ATTACHMENT

TDY Report

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